Generalize:

Consider the general quadratic f(x) = a(x-h)2, a > 0.

The line y = k, k > 0, intersects the graph of f in two distinct points B and C. The rectangle, whose base is on the x-axis and two of whose vertices are B and C, has area R.

(i) Explain *graphically* (not algebraically) why the area, R, of this rectangle is independent of h.

(ii) Express k in terms of a and R. Check that your formula for k gives the value you obtained from part (a).

**Quadratics Generalization** Name:

Rodriguez/Algebra 2H

Generalize:

Consider the general quadratic f(x) = a(x-h)2, a > 0.

The line y = k, k > 0, intersects the graph of f in two distinct points B and C. The rectangle, whose base is on the x-axis and two of whose vertices are B and C, has area R.

(i) Explain *graphically* (not algebraically) why the area, R, of this rectangle is independent of h.

(ii) Express k in terms of a and R. Check that your formula for k gives the value you obtained from part (a).